

Curriculum Vitae, July 2012

**Steven W. Smith**

**Education**

- **B.S. Physics, ██████████, University of Utah**  
General physics program. Additional B.S. degrees in psychology and philosophy.
- **M.S. Physics Instrumentation, ██████████ University of Utah**  
Sensory systems, electronics, digital signal processing, advanced physics. MS research involved measuring electrical noise in solid ionic conductors.
- **Ph.D. Electrical Engineering, ██████████ University of Utah**  
Sensory systems, electronics, digital signal processing, medical imaging. Ph.D. research involved x-ray scattering, 3D computed tomography, and x-ray cardiac imaging at the University of Utah Medical Center.

**Employment History**

- **President and Founder, Tek84 Engineering Group, San Diego CA, (Jan '10 - )**  
The employees and on-going activities of Spectrum San Diego, Inc., became Tek84 Engineering Group, LLC, in Dec. 2009. Tek84 is currently developing the next-generation airport body scanner.
- **President and Founder, Spectrum San Diego, San Diego, CA, (June '98 - Jan '09 )**  
Over its 11 year lifetime, Spectrum San Diego executed over \$9M in government and private contracts, mainly developing x-ray imaging systems for security screening. Spectrum San Diego developed and commercialized three major products: *SentryScope*, an ultra-high resolution surveillance camera; *CastScope*, used to screen cast, bandages and artificial limbs on airport passengers; and *CarScan*, a drive-through portal detecting car bombs, contraband and stowaways.
- **Director of Research, IRT Corporation, San Diego, CA, (Apr '91 - May '97)**  
Management of 8-12 scientists and engineers; continued development and commercialization of the SECURE 1000 body scanner; development of a 3D x-ray imaging system for printed circuit board inspection.
- **President and Founder, Future Research, Inc., Murray, UT, (Jan '89 - Apr '91)**  
Research and prototype development of the SECURE 1000 body scanner, a backscatter x-ray imaging system for detecting weapons and explosives concealed under persons' clothing.
- **Director of Research, Lunar Radiation Corp., Madison, WI, (Mar '87 - Jan '89)**  
Management of 8-12 scientists and engineers; development of bone densitometry systems for measuring osteoporosis and other medical disorders.
- **Electronics Instructor, Salt Lake Community College, WVC, UT, (1982-1985)**  
Lecture and laboratory instruction for electronic engineering students.
- **Police Officer, West Jordan City, West Jordan, UT (1978-1982)**  
Patrol and criminal investigation.

## Books Published

- **The Scientist and Engineer's Guide to Digital Signal Processing**

(1997) California Technical Publishing, San Diego, CA. 626 pages. Hardcover. Clear explanations of practical DSP techniques without getting lost in detailed math and theory. The #1 selling DSP book on Amazon.com out of 500+ similar titles (total of hardcover and softcover editions). In 1999 Analog Devices purchased 20,000 copies for free distribution to their customers. Approximately 5 million copies have been distributed over the internet.

- **Digital Signal Processing: A Practical Guide for Engineers and Scientists**

(2003) Newnes, Burlington MA. 650 pages. Softcover edition of the above book, updated to include digital signal processing hardware.

- **The Inner Light Theory of Consciousness**

(2001) California Technical Publishing, San Diego, CA. 170 pages. Softcover. A novel approach to explaining the nature of the human mind using information theory.

## Patents

- 5,181,234 (1993) X-ray backscatter detection system
- 6,094,472 (2000) X-ray backscatter imaging system with moving body tracking assembly
- 6,269,142 (2001) Interrupted-fan-beam imaging
- 6,665,373 (2003) X-ray imaging system with active detector
- 6,757,008 (2004) Video surveillance system
- 7,084,901 (2006) Surveillance camera with flicker immunity
- 7,110,493 (2006) X-ray detector system having low Z material panel
- 7,742,568 (2010) Automobile scanning system

## Career Highlights

- Inventor of the Airport Body Scanner
- Author of a leading book on Digital Signal Processing
- Invented and commercialized a variety of major products, including: SECURE 1000™, CastScope™, SentryScope™, and CarScan™
- Executed Grants and Contracts totaling over \$9M
- Raised over \$7M in investor funding

## Major Areas of Ongoing Interest

- Challenging instrumentation problems
- Novel applications of x-ray imaging
- Explanations of human consciousness
- Explanations of 1/f noise